

WHAT IS CLAIMED IS:

1. An in-line sander comprising:
an elongated sander housing configured to be
5 grasped by a user of the in-line sander;
a sanding pad holding portion defining an
outwardly facing channel that opens outward from the sander
housing and that extends in a direction generally along a
length of the sander housing, the channel being arranged
10 and configured for receiving and holding a profiled sanding
pad;
a motor housed within the housing; and
an in-line oscillating mechanism operatively
coupled between the motor and the sanding pad holding
15 portion, the in-line oscillating mechanism being arranged
and configured to move the sanding pad holding portion in a
linear oscillating motion, the linear oscillating motion
being in the direction generally along the length of the
housing.
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2. The in-line sander of claim 1, wherein the
profiled sanding pad is secured within the channel of the
sanding pad holding portion, and the profiled sanding pad
has, in a plane substantially perpendicular to the linear
25 oscillating motion, a particular cross sectional profile
which defines, substantially consistently along the length
of the pad, a profile sanding area including portions not
aligned on a single common plane.
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3. The in-line sander of claim 2, wherein the
profiled sanding pad is oriented such that a portion of the
pad protrudes ahead of a front end of the sander housing
throughout the linear oscillating motion.
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4. The in-line sander of claim 2, wherein the
sanding area of the profiled sanding pad includes a curved
sanding surface.
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5. The in-line sander of claim 2, wherein the
sanding area of the profiled sanding pad includes a

plurality of planar sanding surfaces interconnected at discrete edges.

6. The in-line sander of claim 1, further comprising
5 a plurality of profiled sanding pads adapted to be interchangeably secured within the channel of the sanding pad holding portion, each of the profiled sanding pads having a different cross sectional profile.

10 7. The in-line sander of claim 1, wherein the channel has a generally U-shaped cross section.

8. The in-line sander of claim 1, wherein the sanding pad holding portion includes a plurality of
15 projections that extend into the channel, the projections being arranged and configured for assisting in retaining the profiled sanding pad within the channel.

9. The in-line sander of claim 8, wherein the
20 projections comprise ridges.

10. The in-line sander of claim 9, wherein the ridges have an opposing relationship.

25 11. The in-line sander of claim 10, wherein the ridges are arranged in a substantially vertical orientation.

12. The in-line sander of claim 1, wherein the
30 profiled sanding pad is frictionally retained within the channel of the pad holding portion.

13. The in-line sander of claim 12, wherein the profiled sanding pad has elastic characteristics, and
35 portions of the profiled sanding pad are deformed when the pad is inserted in the channel such that the pad is frictionally retained in the channel.

14. The in-line sander of claim 13, wherein the pad
40 holding portion includes projections that extend into the outwardly facing channel, the projections being arranged and configured to deform the portions of the profiled

sanding pad when the profiled sanding pad is inserted within the outwardly facing channel.

15. The in-line sander of claim 2, wherein the
5 sanding pad holding portion comprises a pad frame on which
the outwardly facing channel is defined, the pad frame
including means for detachably coupling the pad frame to
the in-line oscillating mechanism.

10 16. The in-line sander of claim 15, wherein the pad
frame includes substantially pointed front and back
portions, and substantially parallel portions located
between the front and back portions.

15 17. The in-line sander of claim 1, wherein the
channel of the profiled sanding pad holding portion is
defined by opposing first and second holding members.

18. The in-line sander of claim 17, wherein the
20 profiled sanding pad is more elastic than the first and
second holding members, and the profiled sanding pad is
arranged and configured to deform when inserted between the
first and second members.

25 19. The in-line sander of claim 18, wherein the first
and second holding members include a plurality of
projections that extend into the channel, the projections
being arranged for assisting in retaining the profiled
sanding pad within the channel.

30 20. The in-line sander of claim 19, wherein the
projections comprise ridges.